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(56) Prior Art Documents
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GB 1376501

(57) Claim

1. A multi-purpose access kit said access kit when assembled, providing access to a building entrance, the kit comprising a plurality of elements including adjustable support rods adapted to adjustably locate supporting deck rails thereon, deck plates, ramp plates or step panels being adapted to be supported by the deck rails, hand rails adapted to be connected to support posts, connecting elements adapted to join the deck rails at changes of angles in the vertical direction, and hand rail connecting elements adapted to connect the hand rails characterized in that the support posts are of two portions, a threaded lower support rod swivelly mounted in a base, and an upper hollow post to be screwed over the support leg, and adjustable locking nuts on the support rod whereby the rails are positioned over the support rod onto the lock nuts, the deck plates positioned over the support rod onto the rails, the hollow post is screwed onto the deck plate to clamp into position to provide a landing.

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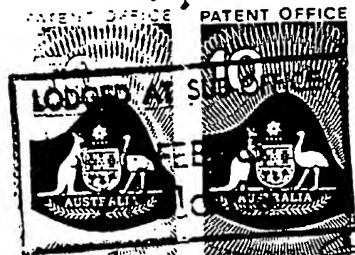
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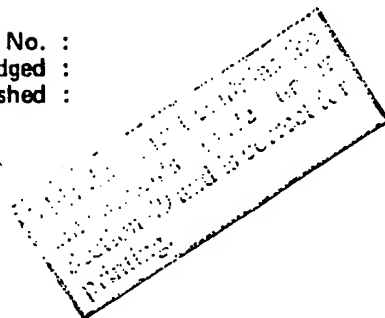
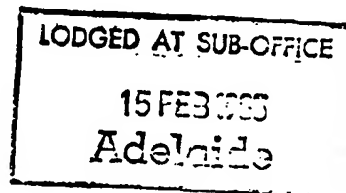
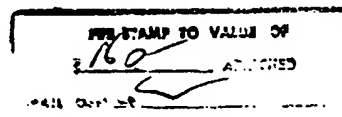
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Application Number : 38795/85.
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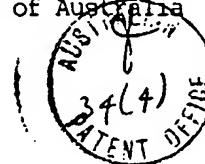
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Complete Specification for the invention entitled:

"MULTI-PURPOSE ACCESS KIT"

The following statement is a full description of this invention, including the best method of performing it known to me.

This invention relates to a multi-purpose access kit, more particularly a kit of elements which can be fitted together to provide a ramp, landing and/or step access to the doorways of buildings, the ramp being
5. suitable for use by the occupants of wheel chairs and the step or ramp access being suitable for use by ambulant persons.

One of the big problems confronting the occupants of wheel chairs in particular, is the access to
10 buildings and to date where access is required often permanent structures are constructed for the access to these buildings. However, for example where access is required to schoolrooms, the access is often only required for one year or so when the student would
15 then proceed to another class in a further building, and then a further access has to be provided, the original access either remaining permanently in position or having to be removed at a great expense.

Also buildings have varying styles of access,
20 either single or double doors, left or right hand opening doors, doors recessed from the outside wall, or doors flush with the outside wall.

It is an object of this invention to provide a kit of elements so that a temporary access can
25 be provided to the building with little or no permanent work such as concreting being required.

Also it is a further object of the invention to provide an access which by suitable selection of various elements is readily adapted to be used
30 on a large variety of access configurations to the building.

3.

Thus there is provided according to the invention, a multi-purpose access kit said access kit when assembled, providing access to a building entrance, the kit comprising a plurality of elements including adjustable support rods adapted to adjustably locate supporting deck rails thereon, deck plates, ramp plates or step panels being adapted to be supported by the deck rails, hand rails adapted to be connected to support posts, connecting elements adapted to join the deck rails at changes of angles in the vertical direction, and hand rail connecting elements adapted to connect the hand rails characterized in that the support posts are of two portions, a threaded lower support rod swivelly mounted in a base, and an upper hollow post to be screwed over the support ^{rod} ~~leg~~, and adjustable locking nuts on the support rod whereby the rails are positioned over the support rod onto the lock nuts, the deck plates positioned over the support rod onto the rails, the hollow post is screwed onto the deck plate to clamp into position to provide a landing.

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In order to more fully describe the invention reference will now be made to the accompanying drawings in which:

FIG. 1 is a perspective view of one form of the assembled kit;
FIGS. 2A-H show the method of assembly and security;
FIG. 3 shows a detail of hand rail and hand rail connector;
FIG. 4 shows a detail of a hand rail termination;
FIGS. 5 and 6 show a step assembly;
FIG. 7 shows the flush panel fixing; and
FIG. 8 shows the wedge termination for ramps.

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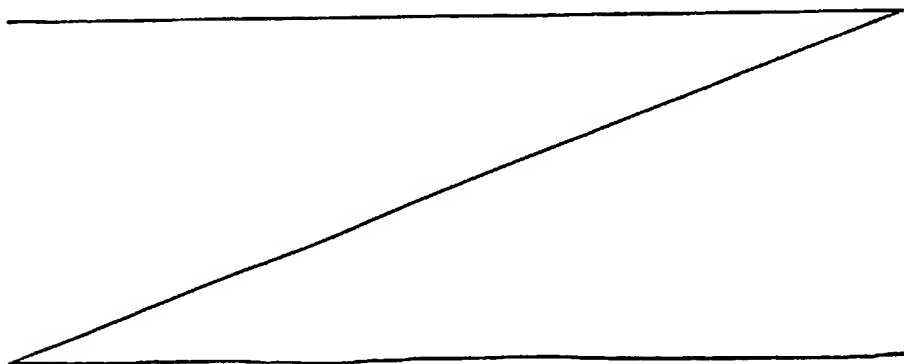
As shown in FIG. 1 an assembled kit is shown fitted over a set of steps 1 leading to an entrance door 2 of a building, there being a single flush mounted inward opening door with a right hand latch. An obstruction 3 exists near the building, and the kit provides wheelchair access 4 and also a set of steps 5 to a landing 6.

35



In one form the kit can comprise a plurality of posts 7, support rods 8, deck rails 9, deck panels 10, step panels 11, ramp plates, connecting elements, hand rail connecting elements and hand rails 12.

5. In a preferred form of the invention the assembly of portion of the kit is shown in FIGS. 2a-h. The support rod 8 is swivelly attached to a foot plate 19, and the post 7 is internally threaded over the support rod 8. In assembly a pair of lock nuts 13 are first threaded down over the support rod 8, an angle deck rail 9 is positioned on the lock nuts, on top of which is positioned the deck plate 10, the threaded member passing through an aperture in the corner of the deck plate. If the deck rail 9 is to be used as a side or edge of the access, the angle is positioned so that the flange extends upwardly, whereas if the deck rail 9 is to be positioned as a join of two deck plates 10, then the flange is positioned downwardly. A washer 14 is fitted over the deck plate 10 as shown in FIG. 2d.
10. 20. The post 7 is then threaded over the thread of the support rod 8 to lock the deck plate 10 and deck rail 9 against the lock nuts 13, the lock nuts 13 being previously adjusted for the correct height.



A similar post 7 and support rod 8 are then erected at an adjacent corner, and the upper portions of the posts are connected by hand rail 12. The hand rail 12 at one end is provided with a lug 16 having an aperture which is adapted to be positioned over the upper end of the post 7, and the other end of the hand rail 12 has a threaded hole 17 through the bottom of the hand rail 12 which is adapted to be positioned over the upper end of the post 7, the upper end of the post 7 having an external threaded portion 18.

The post 7 is then screwed upwardly to lock the ends of adjacent hand rails 12 together, but in so doing it will be realised that the post 7 then moves upwardly relative to the lock nuts 13 on the lower portion of the support rod 8.

In order to overcome this, the support rod 8 together with the lock nuts 13 is rotated to screw further into the post 7 and so bring the post 7 and hand rail 12 back down to the correct height and thus lock the hand rails 12, deck plates 10 and deck rails 9 tightly together. The support rod 8 is rotated by applying a spanner to the nut 20 fixed to the support rod 8, the support rod 8 turning in the foot plate 19.

It will be seen then that the posts and hand rails can be provided on each side of, for example the ramp, with adjacent deck plates being connected together on the deck rails.

At the change of angle from the landing 6 to the ramp 21, a post 7 is provided on the landing, and on the deck plate 10(a) adjacent thereto a post 22 is provided between the deck plate 10(a) and the hand rail 12, a small connecting hand rail portion 12(a) FIG. 3 being provided to join between the hand rail of the ramp and the hand rail of the platform.

The connecting hand rail can be a solid hand rail, or can be a hand rail 12(a) formed of a plastic hose, one end of the hose 12(a) having a flange fitting 29 into which the threaded portion 18 of the post may be screwed, and the other end being adapted to be inserted into the adjacent hand rail 12 and locked thereto by the end 18 of the post 7 screwing through the hand rail 12.

At the lowermost end of the ramp 21, the hand rails 12 have extension pieces formed thereon, these extension pieces being segments of solid rail 24 and plastic hose 25 having means 26 to clamp or clip the lower end to the lowermost post, and the other end being inserted into the hand rail 12 and clamped thereto by the post 7, the extension piece curving round due to the curvature imparted into the hose 25.

Steps can be provided also leading up to the landing, these steps in one form extending from the landing on the opposite side to the ramp.

The deck rails 9 FIG. 5 and 6 are provided to extend downwardly from the landing to the ground level, these being joined together by 9a and bolts 27.

The step panels 11 are supported by and fixed to the step frames 9a connected between the deck rails 9 forming the side portions of the stair, the step frames being supported at their front ends, to the deck rails by bolts 27, and the rear edge being supported by an adjustable rod 28, the rod thus adjusting the step panels 11 depending upon the slope required to take these steps down to the ground level. The sloping deck rails 9 are attached to the horizontal deck rails 9 of the landing by deck links 29 clamped over the support rods 8 by the posts 7.

The deck rails supporting the deck panels and the step frames are preferably deck rails 9 also, these being provided at the appropriate links.

FIG. 7 shows a method of fixing the deck panels 10 flush. The side deck rails 9 have the flange facing downwardly and these are joined across the landing by a pair of side rails 9 bolted together to form a T rail 30. The deck panels 10 are bolted to the side deck rails 9 and the T rail 30, by bolts 31, a rail fixing nut 32 and deck nut 33. The hole through the deck panel 10 is chamfered at both ends to allow the tapered nuts 32, 33 to enter therein, the nut 32 having a barrel portion 34. The deck panel nut 33 is thus flush with the top of the deck panel 10 and is slotted to allow fixing by a screwdriver.

FIG. 8 shows the wedge termination for ramps, one end of the wedge 35 being supported by the ground, and the other end by the support rod 8. The wedge 35 has a support clip 36 welded thereto and attached over the support rod 8 and clamped thereto by the post 7. An angle member 37 supports the deck panel edge. The surface of the wedge is preferably panel 38 of non-slip steel or aluminium attached to angle member 37 and support rails 39 being torsionally flexible such that the wedge can be twisted so end 40 contacts along its length a ground surface that is not parallel to angle member 37.

Where various of the deck plates are joined together to form the landing, such as when four plates are joined to form a larger square landing, the junction of the plates can be supported by further adjustable legs underneath the landing.

Depending upon the door step and door position, adjustable hand rail extensions are provided to bear against the wall of the building and these are adjustably positioned by the screwing upwardly of the adjacent posts so that the posts pass through the aperture in the hand rail to clamp on the extension.

It will be seen that the size of the landing itself can be varied, and the position of the ramp and steps can be either to one side, in line with the door, or the other side as desired and be positioned at varying distances from the building alignment.

The kit of parts is so designed that when the access site is examined, it is merely necessary to then consult a chart in which a certain kit is designated for that access site, and then the kit is assembled from the required number of components for that site which are given by a list corresponding to the designation of the chart.

It is thus merely necessary to assemble the kit at the site, this either being for a short period of time such as one day or a few days, or can be left there semi-permanently for a year or more at which time it can be dismantled and the parts can then be used in further kits as desired.

9.

Although one form of the invention has been described in some detail it is to be realised that the invention is not to be limited thereto but can include various modifications falling within the spirit and scope of the invention.

5

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

5

1. A multi-purpose access kit said access kit when assembled, providing access to a building entrance, the kit comprising a plurality of elements including adjustable support rods adapted to adjustably locate supporting deck rails thereon, deck plates, ramp
10 plates or step panels being adapted to be supported by the deck rails, hand rails adapted to be connected to support posts, connecting elements adapted to join the deck rails at changes of angles in the vertical direction, and hand rail connecting elements adapted to connect the hand rails characterized in that the support
15 posts are of two portions, a threaded lower support rod swivelly mounted in a base, and an upper hollow post to be screwed over the support rod, and adjustable locking nuts on the support rod whereby the rails are positioned over the support rod onto the lock nuts, the deck plates positioned over the support rod onto the rails,
20 the hollow post is screwed onto the deck plate to clamp into position to provide a landing.

2. A multi-purpose access kit as defined in claim 1 wherein the hollow post at its upper end has a threaded portion, and the hand
25 rail has a threaded aperture, whereby the hollow post is screwed upwardly to engage in the threaded aperture of the hand rail, and the support rod is then rotated to bring the post back to the clamping
30 position on the deck plate.

3. A multi-purpose access kit as defined in claim 2 wherein the
35 hollow post connects to adjacent hand rail portions, the adjacent end of one portion having a protruding lug with an aperture, and the adjacent end of the other portion having a threaded aperture, whereby the threaded portion of the posts passes through the aperture of the first portion to engage the threaded aperture of the second portion to clamp two hand rail portions together.



4. A multi-purpose access kit as defined in claim 1 wherein the
kit includes a ramp connected to the landing, the ramp comprising
5 ramp side rails connected to the rails of the landing by connecting
elements clamped between adjacent posts on the landing and
ramp, and ramp deck plates connected to said ramp side rails, said
ramp being supported by support rods and posts extending at right
angles to the ramp surface, the support rods extending at an angle
10 from their respective bases.

5. A multi-purpose access kit as defined in claim 1 wherein the
kit includes a set of steps connected to the landing, said set of steps
including step side rails connected to the landing side rails by said
15 connecting elements clamped between adjacent posts on the steps
and the landing, said set of steps being supported by said side rails
and posts at right angles to the step side rails from the foot plate,
said steps being attached at the front edge to the step side rails,
and suspended by adjustable bolts from the step side rails at their
20 rearward edge.

6. A multi-purpose access kit as defined in claim 4 or 5 wherein
the hand rails are interconnected at the change of angle by said
hand rail connector elements, said hand rail connector elements
25 including flexible tubing clamped to the respective ends of the hand
rails.

7. A multi-purpose access kit as defined in claim 1 wherein the
landing comprises a plurality of deck panels, transverse deck rails
30 positioned transverse to said deck rails, said transverse deck rails
and said deck panels being bolted to said deck rails.

8. A multi-purpose access kit as defined in claim 4 wherein said
ramp includes a wedge joining said ramp to the ground, the wedge
35 being attached by connecting elements to an adjacent part of said
ramp.



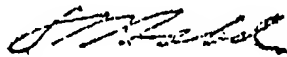
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9. A multi-purpose access kit said access kit, when assembled
5 providing access to a building entrance substantially as
hereinbefore described with reference to and as illustrated in the
accompanying drawings.

DATED this 2nd day of August, 1988.

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THE ADELAIDE INNOVATION CENTRE-
TECHNOLOGY PARK ADELAIDE CORPORATION,
By their Patent Attorneys,
COLLISON & CO.



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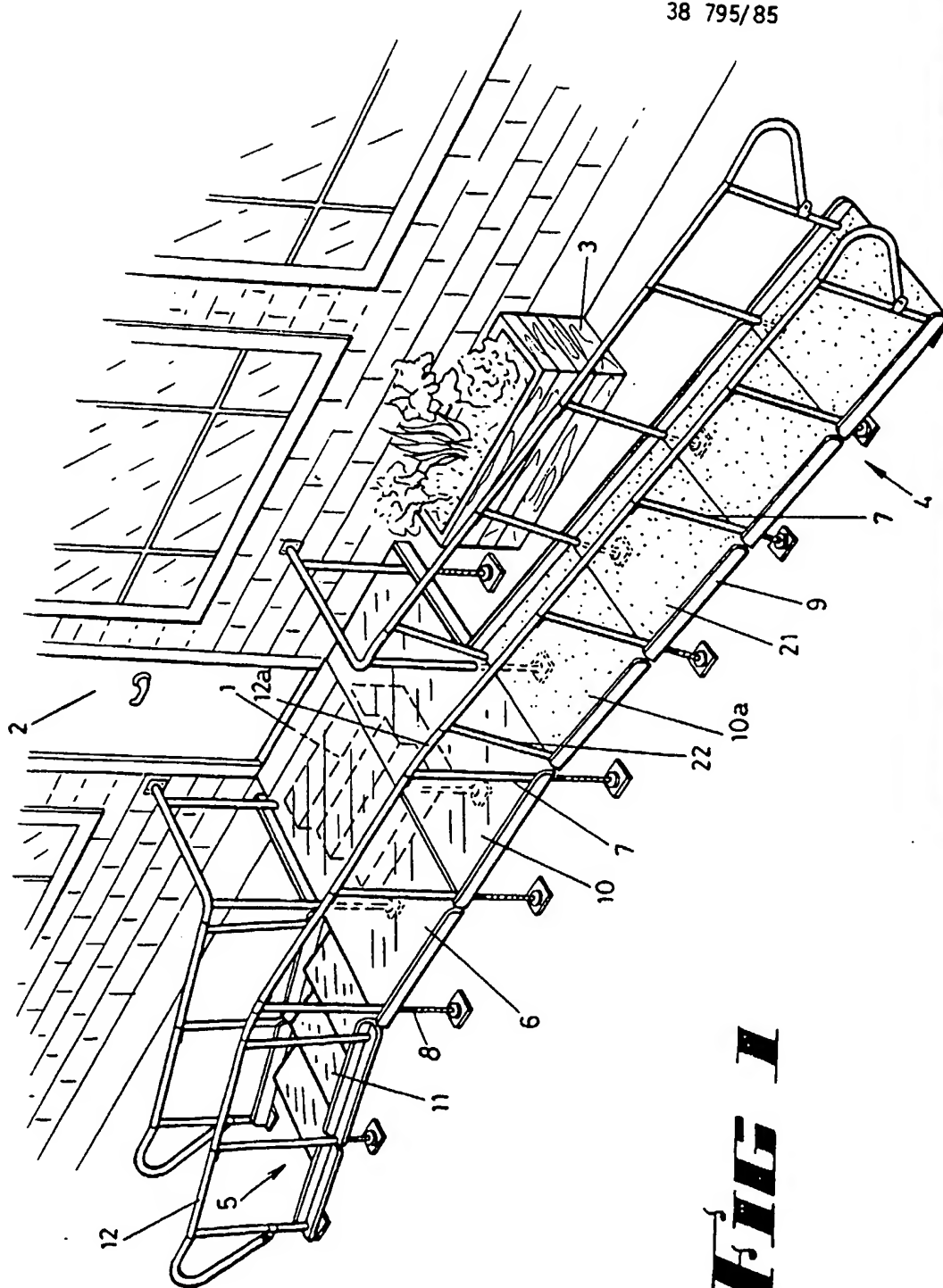
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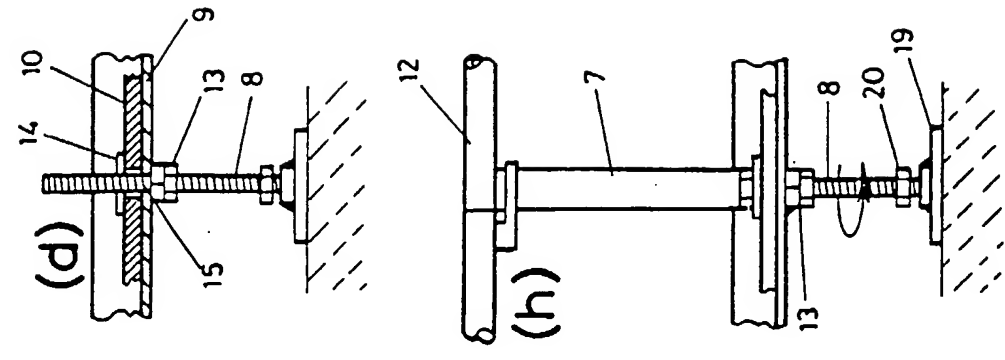
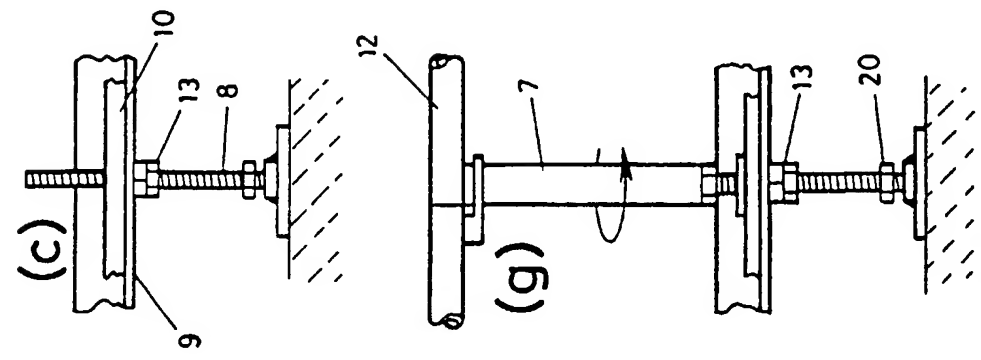
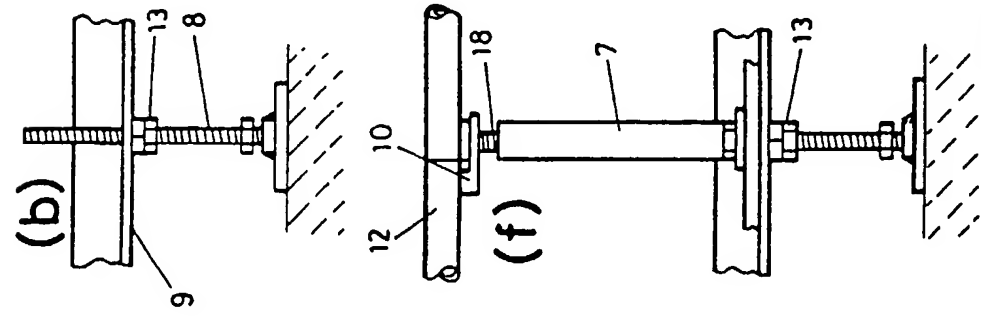
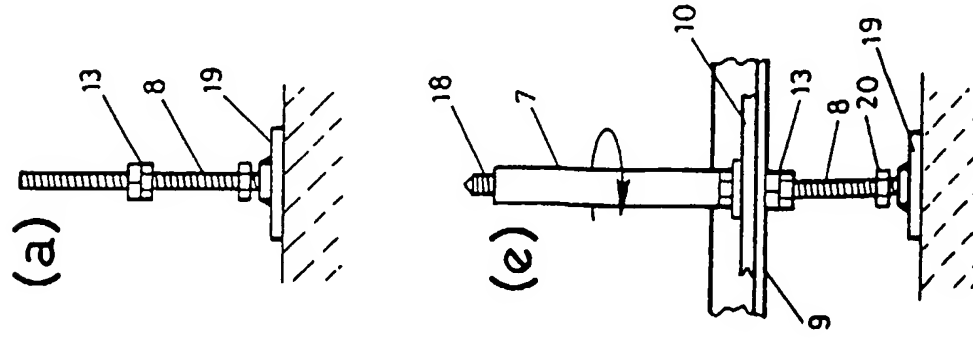


FIG 2

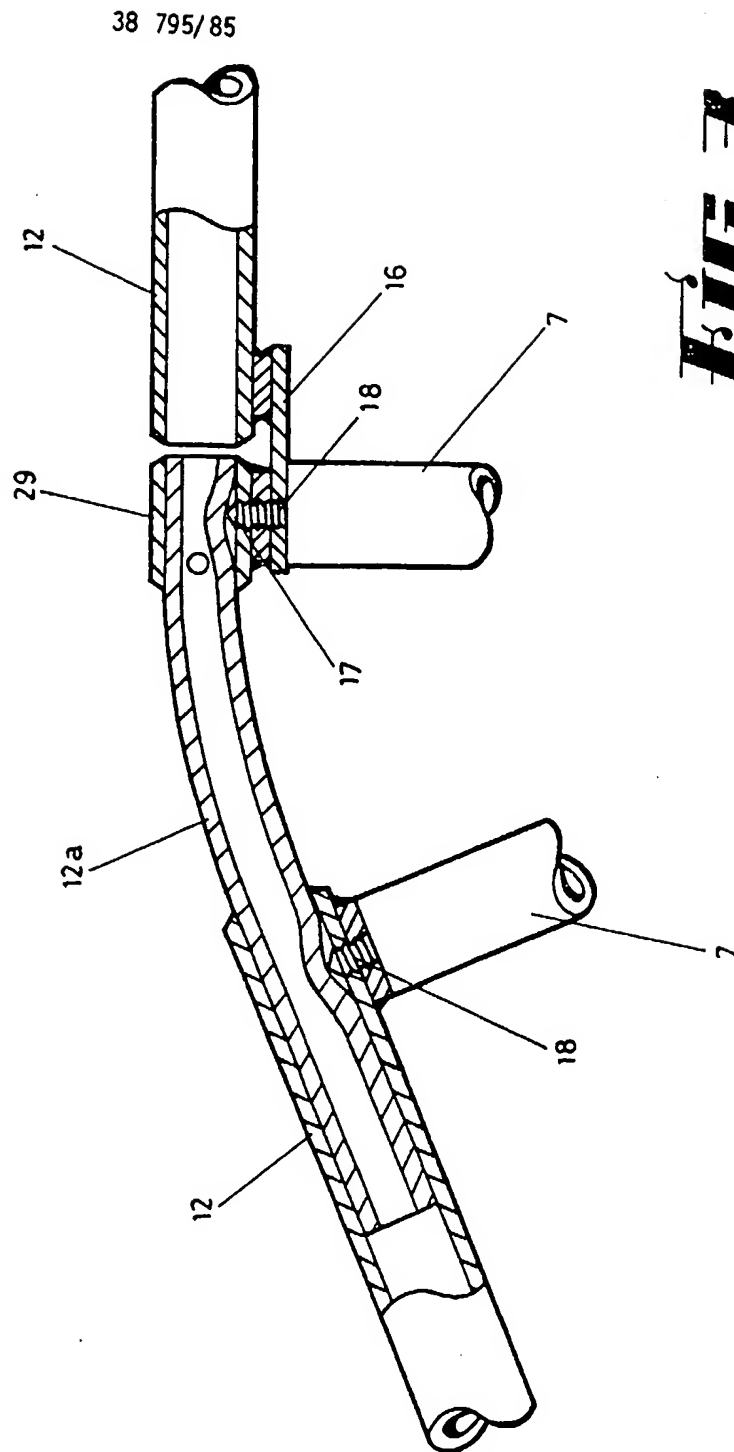


FIG 3

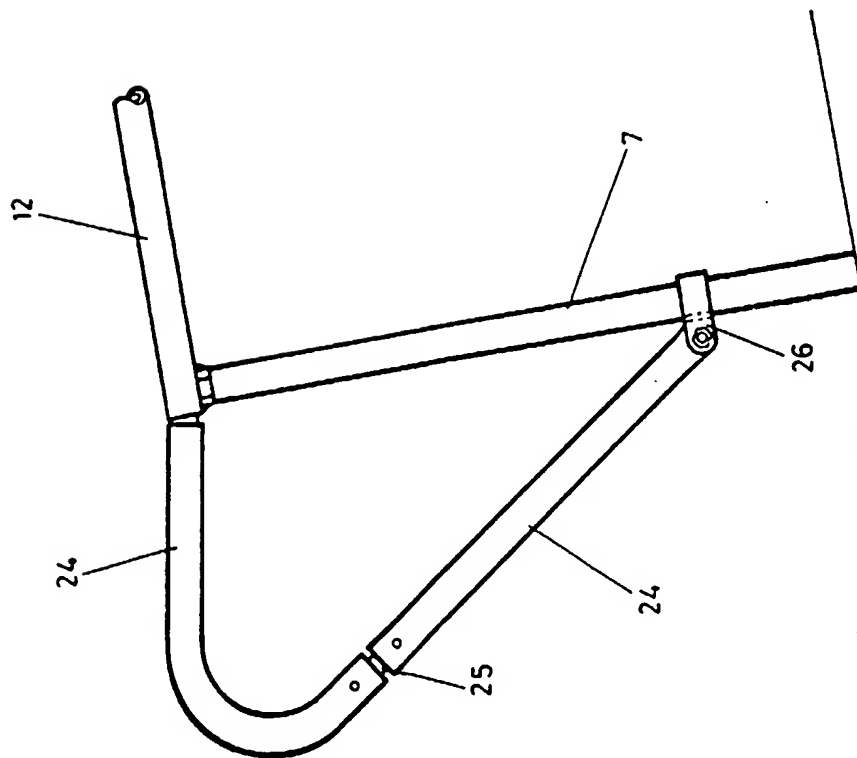


FIG 4 (a)

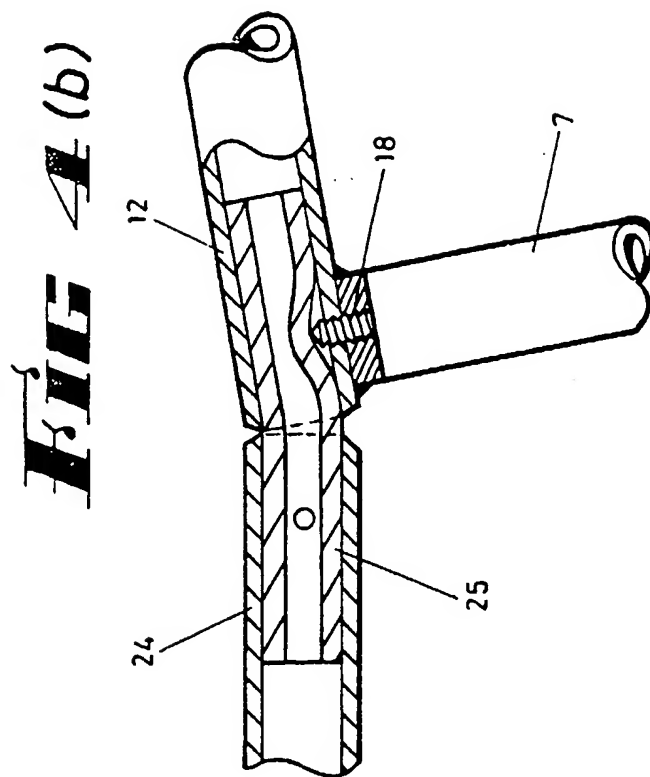
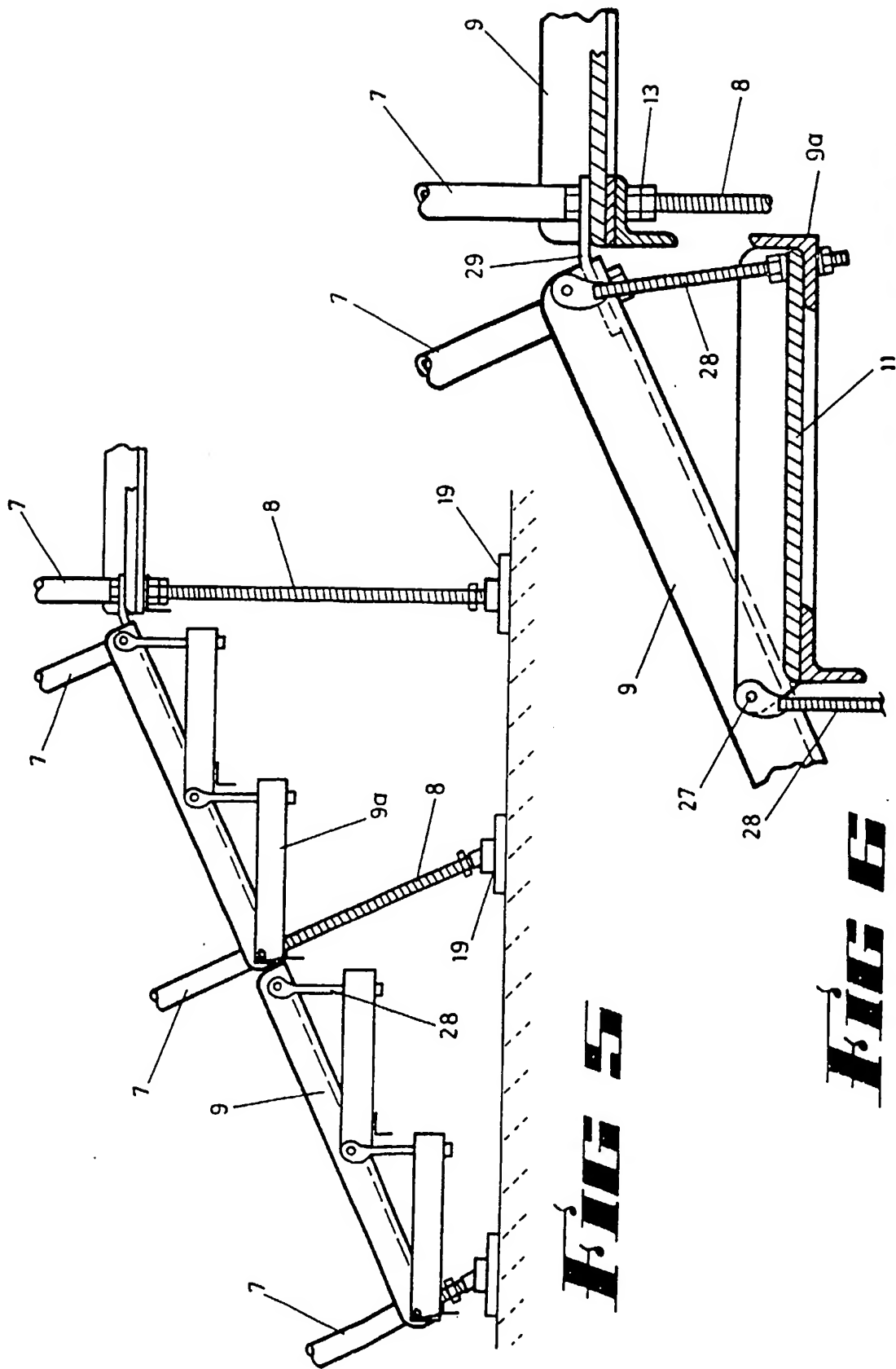


FIG 4 (b)



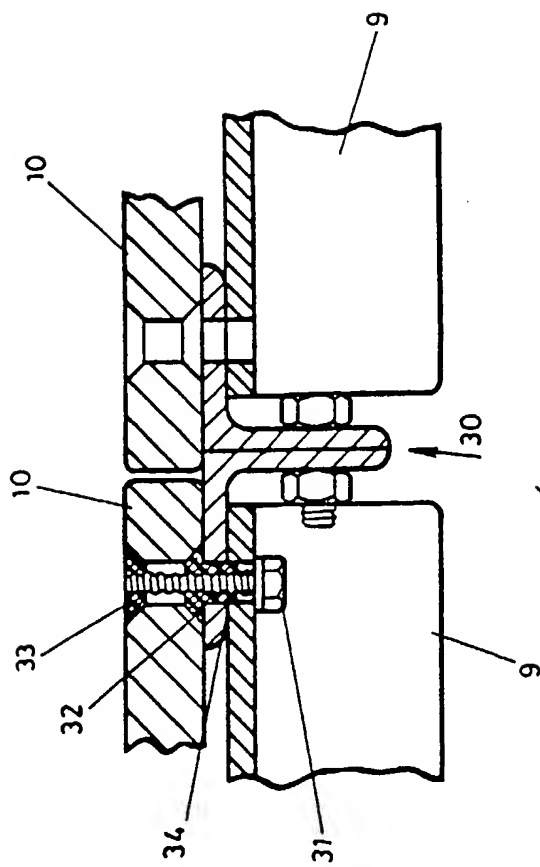


FIG. 1

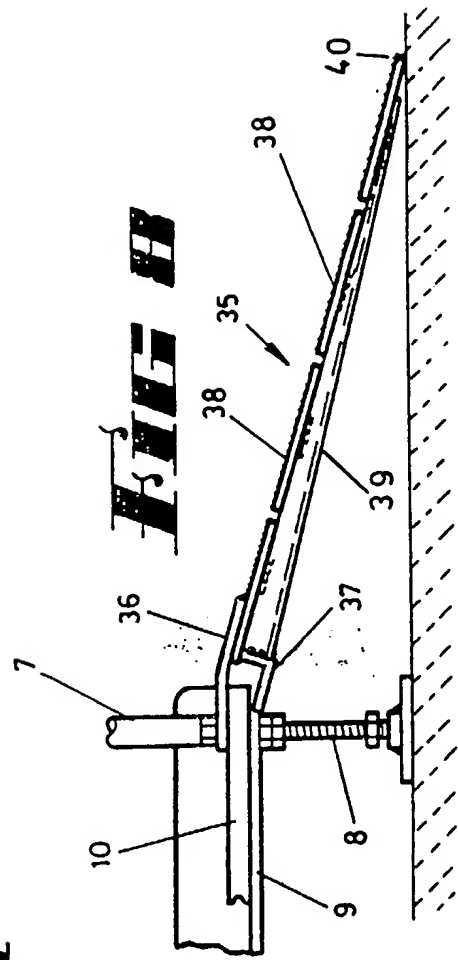


FIG. 2

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